

## CLAIMS

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1. In a data communication network for supporting mobile users, a method of operating a mobile control function , said method comprising:
- exchanging information with a mobile station via a radio access network according to a radio access network protocol;
  - exchanging call control information with a call agent associated with a call of said mobile station; and
  - maintaining connection state information for said mobile station while said mobile station is handled via said radio access network.
2. The method of claim 1 further comprising:
- upon receipt of a handoff request from said radio access network, transferring responsibility for maintaining connection state information to another mobile control function .
3. The method of claim 1 wherein exchanging call control information comprises exchanging call control information via an IP network.
4. In a data communication network for supporting mobile users, a method of operating a call agent , said method comprising:

exchanging call control information with a first mobile control function responsible for mobility management of a mobile station having a call handled by said call agent ; and

maintaining call state information for said mobile station.

5. The method of claim 4 further comprising:

upon a shift of responsibility for mobility management of said mobile station from said first mobile control function to a second mobile control function , exchanging call control information with said second mobile control function ;

continuing to maintain call state information for said mobile station while said second mobile control function maintains connection state information for said mobile station.

6. The method of claim 4 wherein said call control information comprises an indication of an inbound call for said mobile station.

7. The method of claim 4 wherein said call control information comprises an indication of a dialed call from said mobile station.

8. The method of claim 4 wherein exchanging call control information comprises exchanging call control information via an IP network.

9. For use in a data communication network for supporting mobile users, a computer program product for operating a mobile control function, said product comprising:

code that causes a processor to exchange information with a mobile station via a radio access network according to a radio access network protocol;

code that causes said processor to exchange call control information with a call agent associated with a call of said mobile station;

code that causes said processor to maintain connection state information for said mobile station while said mobile station is handled via said radio access network; and

a computer-readable storage medium for storing the codes.

10. The computer program product of claim 9 further comprising:

code that, upon receipt of a handoff request from said radio access network, code that causes said processor to transfer responsibility for maintaining connection state information to another mobile control function .

11. The computer program product of claim 9 wherein said code that causes said processor to exchange call control information comprises code that exchanges call control information via an IP network.

12. For use in a data communication network for supporting mobile users, a computer program product for operating a call agent , said product comprising:

code that causes a processor to exchange call control information with a first mobile control function responsible for mobility management of a mobile station having a call handled by said call agent ;

code that causes said processor to maintain call state information for said mobile station; and

a computer-readable storage medium that stores the codes.

13. The product of claim 12 further comprising:

code that upon a shift of responsibility for mobility management of said mobile station from said first mobile control function to a second mobile control function , causes said processor to exchange call control information with said second mobile control function ; and

code that causes said processor to continue to maintain call state information for said mobile station while said second mobile control function maintains connection state information for said mobile station.

14. The product of claim 12 wherein said call control information comprises an indication of an inbound call for said mobile station.

15. The product of claim 12 wherein said call control information comprises an indication of a dialed call from said mobile station.

16. The product of claim 12 wherein said code that causes said processor to exchange call control information comprises code that causes said processor to exchange call control information via an IP network.

17. For use in a data communication network for supporting mobile users, an apparatus for operating a mobile control function, said method comprising:

a processor that executes software; and

a computer-readable storage medium that stores said software, said software comprising:

code that causes said processor to exchange information with a mobile station via a radio access network according to a radio access network protocol;

code that causes said processor to exchange call control information with a call agent associated with a call of said mobile station; and

code that causes said processor to maintain connection state information for said mobile station while said mobile station is handled via said radio access network.

18. The apparatus of claim 17 wherein said software further comprises:

code that, upon receipt of a handoff request from said radio access network, that causes said processor to transfer responsibility for maintaining connection state information to another mobile control function.

19. The apparatus of claim 17 wherein said code that exchanges call control information comprises code that exchanges call control information via an IP network.

20. For use in a data communication network for supporting mobile users, apparatus for operating a call agent , said apparatus comprising:

a processor that executes software;

a computer-readable storage medium that stores said software, said software comprising:

code that causes said processor to exchange call control information with a first mobile control function responsible for mobility management of a mobile station having a call handled by said call agent; and

code that causes said processor to maintain call state information for said mobile station.

21. The apparatus of claim 20 wherein said software further comprises:

code that upon a shift of responsibility for mobility management of said mobile station from said first mobile control function to a second mobile control function , causes said processor to exchange call control information with said second mobile control function ; and

code that causes said processor to continue to maintain call state information for said mobile station while said second mobile control function maintains connection state information for said mobile station.

22. The apparatus of claim 20 wherein said call control information comprises an indication of an inbound call for said mobile station.

23. The apparatus of claim 20 wherein said call control information comprises an indication of a dialed call from said mobile station.

24. The apparatus of claim 20 wherein said code that exchanges call control information comprises code that exchanges call control information via an IP network.

25. In a data communication network for supporting mobile users, apparatus for operating a mobile control function , said apparatus comprising:

means for exchanging information with a mobile station via a radio access network according to a radio access network protocol;

means for exchanging call control information with a call agent associated with a call of said mobile station; and

means for maintaining connection state information for said mobile station while said mobile station is handled via said radio access network.

26. The apparatus of claim 25 further comprising:

means for, upon receipt of a handoff request from said radio access network, transferring responsibility for maintaining connection state information to another mobile control function .

27. The apparatus of claim 25 wherein said means for exchanging call control information comprises means for exchanging call control information via an IP network.

28. In a data communication network for supporting mobile users, apparatus for operating a call agent, said apparatus comprising:

means for exchanging call control information with a first mobile control function responsible for mobility management of a mobile station having a call handled by said call agent; and

means for maintaining call state information for said mobile station.

29. The apparatus of claim 28 further comprising:

means for, upon a shift of responsibility for mobility management of said mobile station from said first mobile control function to a second mobile control function, exchanging call control information with said second mobile control function; and

means for continuing to maintain call state information for said mobile station while said second mobile control function maintains connection state information for said mobile station.

30. The apparatus of claim 28 wherein said call control information comprises an indication of an inbound call for said mobile station.

31. The apparatus of claim 28 wherein said call control information comprises an indication of a dialed call from said mobile station.



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